

PATENT COOPERATION TREATY


PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

REC'D 30 AUG 2005
WIPO PCT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference AFB/JAS/P9410WO		FOR FURTHER ACTION		See Form PCT/PEA/416
International application No. PCT/GB2004/001343		International filing date (day/month/year) 29.03.2004		Priority date (day/month/year) 31.03.2003
International Patent Classification (IPC) or national classification and IPC F25J3/04				
Applicant AIR PRODUCTS AND CHEMICALS, INC. et al.				
<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 8 sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input type="checkbox"/> sent to the applicant and to the International Bureau a total of sheets, as follows:</p> <p><input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>				
<p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the opinion</p> <p><input checked="" type="checkbox"/> Box No. II Priority</p> <p><input checked="" type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input checked="" type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input checked="" type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input checked="" type="checkbox"/> Box No. VIII Certain observations on the international application</p>				
Date of submission of the demand 22.10.2004		Date of completion of this report 26.08.2005		
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465		Authorized Officer Göritz, D Telephone No. +49 89 2399-7934		



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Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language , which is the language of a translation furnished for the purposes of:
- ☐ international search (under Rules 12.3 and 23.1(b))
 - ☐ publication of the international application (under Rule 12.4)
 - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)
2. With regard to the **elements*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

Description, Pages

1-12 as originally filed

Claims, Numbers

1-31 as originally filed

Drawings, Sheets

1/1 as originally filed

- ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing

3. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages
- ☐ the claims, Nos.
- ☐ the drawings, sheets/figs
- ☐ the sequence listing (*specify*):
- ☐ any table(s) related to sequence listing (*specify*):

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- ☐ the description, pages
- ☐ the claims, Nos.
- ☐ the drawings, sheets/figs
- ☐ the sequence listing (*specify*):
- ☐ any table(s) related to sequence listing (*specify*):

* If item 4 applies, some or all of these sheets may be marked "superseded."

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Box No. II Priority

1. ☒ This report has been established as if no priority had been claimed due to the failure to furnish within the prescribed time limit the requested:
- ☒ copy of the earlier application whose priority has been claimed (Rule 66.7(a)).
 - ☐ translation of the earlier application whose priority has been claimed (Rule 66.7(b)).
2. ☐ This report has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rule 64.1). Thus for the purposes of this report, the international filing date indicated above is considered to be the relevant date.
3. Additional observations, if necessary:

Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

1. The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non-obvious), or to be industrially applicable have not been examined in respect of:
- ☐ the entire international application,
 - ☒ claims Nos. 27-29
- because:
- ☐ the said international application, or the said claims Nos. relate to the following subject matter which does not require an international preliminary examination (specify):
 - ☐ the description, claims or drawings (*indicate particular elements below*) or said claims Nos. are so unclear that no meaningful opinion could be formed (*specify*):
 - ☐ the claims, or said claims Nos. are so inadequately supported by the description that no meaningful opinion could be formed.
 - ☒ no international search report has been established for the said claims Nos. 27-29
 - ☐ the nucleotide and/or amino acid sequence listing does not comply with the standard provided for in Annex C of the Administrative Instructions in that:
 - the written form ☐ has not been furnished
 - ☐ does not comply with the standard
 - the computer readable form ☐ has not been furnished
 - ☐ does not comply with the standard
 - ☐ the tables related to the nucleotide and/or amino acid sequence listing, if in computer readable form only, do not comply with the technical requirements provided for in Annex C-*bis* of the Administrative Instructions.
 - ☐ See separate sheet for further details

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Box No. IV Lack of unity of invention

1. ☒ In response to the invitation to restrict or pay additional fees, the applicant has:
- ☐ restricted the claims.
 - ☐ paid additional fees.
 - ☐ paid additional fees under protest.
 - ☒ neither restricted nor paid additional fees.
2. ☐ This Authority found that the requirement of unity of invention is not complied with and chose, according to Rule 68.1, not to invite the applicant to restrict or pay additional fees.
3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is
- ☐ complied with.
 - ☒ not complied with for the following reasons:
see separate sheet
4. Consequently, this report has been established in respect of the following parts of the international application:
- ☐ all parts.
 - ☒ the parts relating to claims Nos. 1-26,30,31 .

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	2-5,14
	No: Claims	1,6-13,15-26,30,31
Inventive step (IS)	Yes: Claims	-
	No: Claims	1-26,30,31
Industrial applicability (IA)	Yes: Claims	1-26,30,31
	No: Claims	-

2. Citations and explanations (Rule 70.7):

see separate sheet

Box No. VII Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

see separate sheet

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Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

see separate sheet

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1. Reference is made to the following documents:

- D1: FR-A-2 780 147 (AIR LIQUIDE) 24 December 1999
- D2: EP-A-1 182 412 (LINDE AG) 27 February 2002
- D3: EP-A-1 103 772 (LINDE AG) 30 May 2001
- D4: DE 100 51 141 A (AIR LIQUIDE) 19 April 2001
- D5: EP-A-1 041 353 (BOC GROUP INC) 4 October 2000
- D6: US-A-5 349 827 (GRELAUD ALAIN ET AL) 27 September 1994
- D7: US-A-6 128 921 (GUILLARD ALAIN ET AL) 10 October 2000
- D8: US-A-5 461 871 (GRELAUD ALAIN ET AL) 31 October 1995
- D9: DE 28 22 774 A (LINDE AG) 29 November 1979

Re Item IV

2. This Authority considers that there are two inventions covered by the claims indicated as follows:

- I: **Claims 1-26, 30,31**
- II: **Claims 27-29**

The reasons for which the inventions are not so linked as to form a single general inventive concept, as required by Rule 13.1 PCT, are as follows:

The common concept that does link together the independent **claims 1, 19, 25, 27-29 and 30** is the use of a first distillation column module, a heat exchange module or at least one fluid processing unit in the construction of an assembled unit the latter being incorporated into apparatus for the cryogenic distillation of air and being transported to and erected at the site for a cryogenic air separation plant.

This common concept is not novel with respect to the state of the art cited in the description of the application (D8) and therefore not considered as special technical features in the sense of Rule 13.2 PCT. Since there is no common special technical feature, a technical relationship as required by Rule 13.2 PCT is not present.

In conclusion, the groups of claims are not linked by common or corresponding special technical features and define two different inventions not linked by a single general

inventive concept. The application, hence does not meet the requirements of unity of invention as defined in Rules 13.1 and 13.2 PCT.

Re Item V

3. The document D1 is regarded as being pertinent prior art to the subject-matter of independent claim 1 and discloses (Reference is made to the citations of the International Search Report):

An apparatus for the cryogenic distillation of air comprising an assembled unit (30,32). The assembled unit which is suitable for transportation to and erection at a site for a cryogenic air separation plant comprises a first distillation column module (2,3), a heat exchange module (12) and at least one fluid processing unit (4,6,45) wherein the two modules and the processing unit being operationally interconnected.

Moreover, it would appear that the subject-matter of independent claim 1 is also known from similar prior art apparatuses disclosed by D2 and D3.

Consequently and notwithstanding the clarity objection below (see Item VIII), the subject-matter of **claim 1** is not novel (Article 33(2) PCT).

4. The subject-matter of the corresponding method **claim 19** and use **claim 30** of claim 1 is also not new with respect of the above mentioned reasons (Article 33(2) PCT).
5. Notwithstanding the clarity objection below (see Item VIII), it appears that the subject-matter of the analogue method **claim 25** of claim 19 is also not new with respect of the above mentioned reasons (Article 33(2) PCT).
6. Dependent claims 2 to 18, 20 to 24, 26 and 31 do not contain any features which, in combination with the features of any claim to which it refers, meet the requirements of the PCT in respect of novelty and/or inventive step (Article 33(2)/(3) PCT). The additional features of the dependent claims are partly known from above cited documents D1-D8 (**claims 2-17 and 20-24**), refer merely to the use of the known apparatus from D2 (**claim 31**) or form part of the normal consideration of the man skilled in the art (**claims 18 and 26**). Reference is also made to the citations of the International Search Report.

Re Item VII

7. The claims do not meet the rules 6.2(b) and 6.3(b) PCT.

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The description does not meet Rule 5.1(a)(ii) PCT, because D1-D3 are not cited therein.

Re Item VIII

8. Claims 1, 19 and 25 do not meet the requirements of Article 6 PCT in that the matter for which protection is sought is not clearly defined.
 - 8.1 Although the two method **claims 19 and 25** have been drafted as separate independent claims, they appear to relate effectively to the same subject-matter and to differ from each other only with regard to the definition of the subject-matter for which protection is sought and in respect of the terminology used for the features of that subject-matter. The aforementioned claims therefore lack conciseness. Moreover, lack of clarity of the claims as a whole arises, since the plurality of independent method claims makes it difficult, if not impossible, to determine the matter for which protection is sought, and places an undue burden on others seeking to establish the extent of the protection.
 - 8.2 Additionally, it is clear from the description on page 9, lines 28 to 35, that the feature of transporting the assembled unit to and erection of it at plant site is essential to the definition of the invention. In the assessment of novelty and inventive step of independent **claims 1 and 19** it is therefore understood that this feature is not facultative contrary to the wording used ("suitable").